ABSTRACT

Background-foreground segmentation is performed as a maximum likelihood classification. During a training procedure, a system estimates the parameters of likelihood probability models, which are the probability of observing images assuming that the images come from the background scene. During normal operation, the likelihood probability of captured images is estimated using the background models. The background-foreground segmentation is carried out by comparing the likelihood probabilities of the test images with fixed thresholds. The probability of observing foreground objects is assumed constant, as foreground images are generally not modeled. This value, the probability threshold, preferably represents a tunable parameter of the system. Pixels with low likelihood probability of belonging to the background scene are classified as foreground, while the rest are labeled as background.